



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/659,041	09/09/2003	Ge Zhu	HYM-002	3276

22888 7590 04/28/2006
BEVER HOFFMAN & HARMS, LLP
TRI-VALLEY OFFICE
1432 CONCANNON BLVD., BLDG. G
LIVERMORE, CA 94550

EXAMINER

LEE, MICHAEL

ART UNIT PAPER NUMBER

2622

DATE MAILED: 04/28/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/659,041	Applicant(s) ZHU ET AL.	
	Examiner M. Lee	Art Unit 2622	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 September 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-38 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6, 12-30, 36-38 is/are rejected.
- 7) ☒ Claim(s) 7-11 and 31-35 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-4, 13, 16-30 are rejected under 35 U.S.C. 102(e) as being anticipated by Adams et al. (6,700,622).

Regarding claim 1, Adams discloses a video format detecting apparatus showing a differencer 178, which meets the calculating step as claimed, a threshold comparator 183, which meets the detecting step as claimed, a progressive frame pattern detector 158, which meets the classifying step as claimed, a special mode performing step (see col. 7, lines 7-39), and a normal mode performing step (see col. 7, lines 40-48).

Regarding claims 2-4, see col. 7, lines 13-17.

Regarding claim 13, see field 160 and field 162.

Regarding claim 16, Adams shows a buffer (134), a mode detector (142), and a field merging and conversion unit (150,154).

Regarding claim 17, see four-field memory 134.

Regarding claim 18, consecutively connected buffers (134a-134d) are operated as a circular buffer.

Regarding claim 19, Adams shows a field difference calculation unit (178), and a field-to-field difference FIFO (186, 200).

Regarding claim 20, see next field 160 and last field 154.

Regarding claim 21, see col. 8, lines 49-50.

Regarding claim 22, see col. 9, lines 27-39.

Regarding claims 23-26, see rejection to claim 1.

Regarding claims 27-30, see corresponding rejections above.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 5, 6, 12, 14, 15, 36 and 38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Adams et al. (6,700,622).

Regarding claim 5, Adams does not specify that the performing normal mode deinterlacing when the input interlaced video stream is classified as normal mode comprises repeating each scan lines in a current field to form a frame as claimed. Instead, the frame in Adams is generated by combining two consecutive fields (even and odd field) together. However, one would have recognized that the normal mode deinterlacer could be any conventional deinterlacer so long it is able to convert a field signal to a frame signal. The examiner take Official Notice that generating a frame by

repeating field lines is well known in the art because it is one of the most simple and economical method. Hence, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify Adams to include the well known line doubler to perform the normal deinterlacing operation.

Regarding claim 6, Adams does not specify that the interpolating deinterlacing step as claimed. In addition to above reasoning, the examiner further takes Official Notice that using an interpolator to generate a deinterlaced signal is well known in the art as mentioned by Adams in the background of the invention (note col. 2, lines 27-34). The advantage of such deinterlacer is it produces no motion artifacts. Hence, knowing that the normal mode deinterlacer could be replaced with any conventional deinterlacer, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify Adams to include the well known interpolating line doubler to perform the well known functions as claimed.

Regarding claim 12, Adams does not specify the absolute difference of the field pixels as claimed. Instead, Adams cursorily mentions that the pixel differences are stored array 180. Without calculating the absolute value of the pixel differences, the overall field differences can be reduced because negative values cancel out the positive values. The examiner takes Official Notice that using absolute values to calculate two-field difference is well known in the art because it reflects the true difference of two fields. Hence, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to include an absolute value calculating step into Adams so that the field differences could be correctly calculated.

Regarding claim 14, in addition of rejection above, Adams further shows a comparing step (183) and a summing step (182).

Regarding claim 15, in addition of above, the field difference accumulator accumulates the pixel differences over the entire field in response to the threshold-compared values, which meets the incrementing step as claimed.

Regarding claims 36-38, see rejections to claims 12-15.

Allowable Subject Matter

5. Claims 7-11, 31-35 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

6. Applicant is advised of possible benefits under 35 U.S.C. 119(a)-(d), wherein an application for patent filed in the United States may be entitled to the benefit of the filing date of a prior application filed in a foreign country.

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Hui (6,870,568) shows a progressive/interlace detector.

Krause (4,881,125) shows a film sync detector.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to M. Lee whose telephone number 571-272-7349. The examiner can normally be reached on Monday through Thursday from 9 to 6.

Art Unit: 2622

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David L. Ometz, can be reached on 571-272-7593. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



M. Lee
Primary Examiner
Art Unit 2622